

A.G. Scientific, Inc.

6450 Lusk Blvd. Suite E102
SAN DIEGO, CA 92121



MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name:	Leupeptin, Hemisulfate, synthetic
Product #:	L-1165
Synonyms:	Acetyl-Leu-Leu-Arg-al; N-Acetyl-L-leucyl-L-leucyl-L-argininal hemisulfate salt.
Supplier:	A.G. Scientific, Inc. 6450 Lusk Blvd E102 San Diego CA 92121 Tele# + 858-452-9925 Fax# + 858-452-9926
Emergency Tele#:	Chemtrec, Tele# in USA 1-800-424-9300, International 1-703-527-3887

Section 2: Composition / Information on Ingredients

Component	CAS#	EC #	%	Classification	R Phrases
	103476-89-7	-	-	-	-

Section 3: Hazards Identification

HMIS Classification	Health Hazard: 0
	Fire Hazard: 0
	Reactivity Hazard: 0
	Personal Protection: A
NFPA Classification	Health Hazard: 0
	Fire Hazard: 0
	Reactivity Hazard: 0
	Specific Hazard:

Section 4: First Aid Measures

General Overview:	Avoid contact, wear suitable protective clothing, gloves and eye/face protection.
Inhalation:	May be harmful if inhaled. May cause respiratory tract irritation. If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration, seek medical attention.
Skin:	May be harmful if absorbed through skin. May cause skin irritation. Wash immediately with water for 15 minutes. Remove contaminated clothing. Wash contaminated clothing before reuse. Seek medical attention if symptoms appear.

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Eyes:	May cause eye irritation. In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes. Remove contacts.
Ingestion:	May be harmful if swallowed. If swallowed, wash out mouth with water provided person is conscious. DO NOT induce vomiting. Seek medical attention if symptoms appear. Loosen tight clothing like collar, tie, belt or waistband.
<i>See section 11 for more detailed information on health effects & symptoms</i>	

SECTION 5: Fire Fighting Measures

Flammability of the product:	May be combustible at high temperatures.
Extinguishing Media:	Dry Chemical Powder for SMALL FIRES and carbon dioxide or water spray, fog or foam for LARGE FIRES. Do not use water jet.
Special Fire Fighting Procedures:	Wear self-contained breathing apparatus (SCBA) and protective clothing to prevent contact with skin and eyes. Be sure to use an approved/certified respirator or equivalent.
Flash Point:	N/A

Section 6: Accidental Release Measures

Personal Precautions:	Use Personal Protection Equipment. Splash goggles. Full suit. Boots. Gloves. Avoid dust formation.
Environmental Precautions:	Do not let product enter drains
Methods for Clean-up:	Sweep up & shovel into suitable disposal container. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: Handling & Storage

Storage:	Store at -20°C. Keep container tightly closed and in a well ventilated area. Do not store above -20°C (-4°F).
Handling:	Use only in area provided with appropriate exhaust ventilation. Keep away from heat and source of ignition. Empty containers pose a fire risk, evaporate residue under fume hood. Ground all equipment containing material. Do not breathe dust.

SECTION 8: Exposure controls / Personal Protection

Respiratory Protection:	Respiratory protection is not required. If protection from nuisance levels of dust are desired, use type N95 or type P1 (EN 143) dust mask. Respirators and components must be tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
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Skin and Body:	Chemical-resistant gloves and lab coat/other protective clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling.
Eyes:	Safety goggles.
Ventilation/Engineering Measures:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
HYGIENE:	Wash hands after handling compound and before eating, smoking, using lavatory and at the end of the day.
Other:	Contains no substances with occupational exposure limit values.

SECTION 9: Physical and Chemical Properties

Appearance & Odor:	Solid
Color:	N/A
Formula:	$C_{20}H_{38}N_6O_4 \cdot \frac{1}{2}H_2SO_4$
Molecular Wt.	475.60 g/mole
Melting Pt.	N/A
Boiling Pt.	N/A
Density:	N/A
Vapor Pressure:	N/A
Evaporation Rate:	N/A
Vapor Density:	N/A
Solubility:	N/A
Flash Point:	N/A
Autoignition Temp:	N/A

SECTION 10: Stability and Reactivity

Stability:	This product is stable
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions- Carbon oxides, nitrogen oxides (NOx), Sulphur oxides.
Materials to Avoid:	Strong acids and bases
Conditions to avoid:	N/A



SECTION 11: Toxicological Information

RTECS#:	N/A
ACUTE Toxicity:	LD ₅₀ : N/A LD ₅₀ : N/A
CHRONIC Toxicity:	Repeat or prolonged exposure is not known to aggravate medical conditions.
Chronic Exposure: Carcinogen: Mutagen: Teratogen: Reproductive:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. N/A N/A N/A

SECTION 12: Ecological Information

Ecotoxicity:	N/A
Other adverse effects:	N/A

SECTION 13: Disposal Considerations

Residue waste/contaminated packaging or unused product:	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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SECTION 14: Transportation Information

ADR / RID (LAND)	Not controlled under ADR (Europe), Not dangerous goods (US)
IMDG/IMO (SEA)	Not controlled under IMDG, Not dangerous goods
IATA/DGR (AIR)	Not controlled under IATA, Not dangerous goods
Special Provisions:	N/A

SECTION 15: Regulatory Information

EU Regulations:	This product is not classified according to the EU regulations.
U.S. Federal Regulations:	TSCA: No products were found. SARA 302/304/311/312 extremely hazardous substances: No products were found SARA 302/304 emergency planning and notification: No products were found.

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	<p>SARA 302/304/311/312 hazardous chemicals: No products were found.</p> <p>SARA 311/312 MSDS distribution-chemical inventory-hazard identification: No products were found.</p> <p>SARA 313 toxic chemicals notification and release reporting: No products were found.</p> <p>Clean Water Act (CWA) 307: No products were found.</p> <p>Clean Water Act (CWA) 311: No products were found.</p> <p>Clean Air Act (CAA) 112 accidental release prevention: No products were found.</p> <p>Clean Air Act (CAA) 112 regulated flammable substances: No products were found.</p> <p>Clean Air Act (CAA) 112 regulated toxic substances: No products were found.</p>
HCS Classification:	Not controlled under the HCS (United States)
WHMIS (Canada):	Not controlled under the WHMIS (Canada) No products were found.
Further information:	The product does not need to be labeled in accordance with EC directives or respective national laws.

SECTION 16: Other Information

LIABILITY STATEMENT: *The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. A.G. Scientific shall not be held liable for any damages resulting from handling or from contact with the above product. A.G. Scientific products are for research purposes only. Not for human use or consumption.*

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